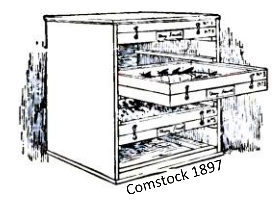
How to Make an Insect Collection

Stuff You'll Need:

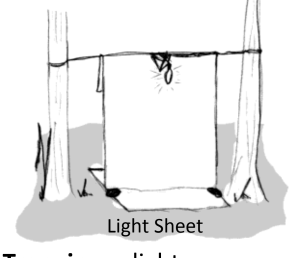
1. Specimens
2. Insect Pins
3. Labels
4. Collection Box



1. How to Get Specimens


Sweep Net

Collecting insects is as simple as grabbing them with your hands. **Nets** are a great way to collect big and small insects. There are three types of nets: **aerial nets** (butterflies, dragonflies); **sweep nets** (for insects on bushes, branches, grass, and flowers); and **aquatic nets** (insects in ponds and streams).


Light Sheet


Aspirator: Suck insects into the vial. The screen keeps you from eating the specimen.

Light Trapping, a light on a hanging white sheet is a great way to collect. Insects are attracted to light at night. Ultra-violet "black lights" and grow lights work best.

Aspirators ("pooters") are used to collect small insects.

Killing insects: Insects can be killed several ways: **Freezing** overnight; using a **Killing Jar,** a sealable glass jar with napkins soaked in a little finger nail polish remover; or emersion in **Alcohol** (rubbing or ethyl), but specimens will be brittle if left in too long. Don't let delicate insects like butterflies or bees get wet. Soft-bodied insects, immature insects (caterpillars, etc.), and spiders will shrivel if they dry and should be kept in alcohol.

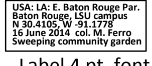
2. Insect Pins

Insect pins are specifically designed for entomology. They are long, thin, have a special coating, and come in different sizes—#2 is best for general use. Search "Bioquip insect pins" to find some for sale. Insect pins are the only item that must be purchased, everything else can be homemade.



3. Labels

Every specimen MUST have a label. The absolute minimum info is an exact location and date. **Location:** state; parish or county; distance and direction to the nearest city or town; GPS (use Google Maps); habitat (sweeping flowers, pond, cow dung); and collector's name. **Date:** dates can be easily misinterpreted. Write the date exactly like this: **Day** (as a number), **Month** (as a word), **Year** (all four numbers) = 23 June 2014. Use archival paper (acid free) and waterproof ink. Make labels readable but small.



Label 4 pt. font.

4. Collection Box

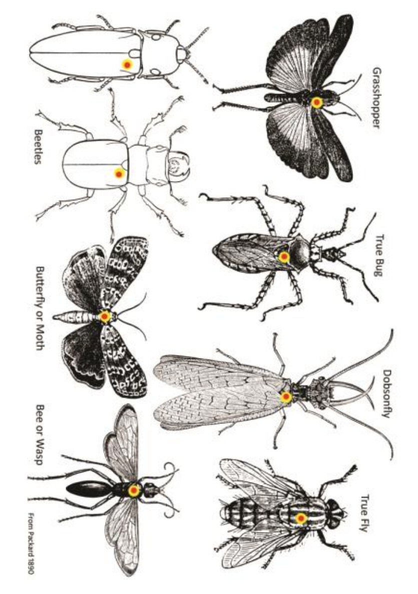
Specimens need protection from breakage, dust, water, humidity (specimens will mold), long-term light exposure, and dermestid beetles (they eat dead insects!). A collection box can be made from a school box, fishing tackle box, shoe box, shipping box, or specifically designed wooden box with a glass top. Use styrofoam or plastazote in the bottom of the box to stick the pins in. Specimens should be stored in low humidity, away from light, and checked for dermestid damage. Freeze the collection if dermestid beetles are present.


Schmidt style collection box

How to Get Started

1. Collect some insects and make sure they're dead.

2. Pin your specimens. Stick the pin through the body at the correct spot depending on the type of insect. Push the insect to within ½ inch of the top of the pin. If you want, arrange the wings (a must for butterflies and moths) or legs on a **Pinning Board** (a piece of styrofoam works).



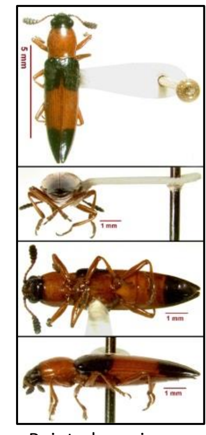
Unlike the illustration, position the legs under the body, the specimen is less likely to be broken. Once the specimen dries (couple days) it will remain in this position. The pinned insect is "preserved" through dehydration. Once dry, never touch the insect, use the pin to move it.

Spreading Butterflies and Moths takes time and patience; check the Internet for instructions. Pin the specimen through the body and hold the wings in place with paper strips. Let the specimen dry for 4–5 days before removing paper.


Spread White-lined Sphinx

3. Advanced Technique: Pointing.

Really small insects can't be pinned. **Points**, triangular pieces of archival paper, are put on pins about ½ inch from the top. Holding the pin, dip the tip of the point in glue (Elmer's works), then carefully touch the tip of the point to the RIGHT side of the specimen. Correct orientation is important, see figure.



Pointed specimen: above; behind; below, left.

4. LABEL YOUR SPECIMENS.

Locality labels should be small, 4–5 point font with no border around the text. They can also be handwritten. Push the label up on the pin, but not so close to the specimen that it can't be read.
Identification labels should be below the locality label and also easily readable.

5. Identify your specimens. Don't expect to ID your specimens to **Species**. There are 100,000+ species of insects in North America. Some haven't even been described by scientists! No field guide can cover them all. Some are well known and easy to identify to species, like butterflies, dragonflies, and big beetles, but others are very difficult to identify to species, like ant-like stone beetles (Scydmaeninae). First, ID your specimens to **Order** (beetles = Coleoptera, flies = Diptera, dragonflies = Odonata, etc.), then to **Family** (ground beetles = Carabidae, tree hoppers = Membracidae, etc.). Use books and the internet to get good IDs, but identification can be very difficult, even for professionals. See **Entomology Resources** below.

6. Arrange your specimens. Group your specimens by Order and Family and place them in a pleasing arrangement.



An insect collection containing 19 Orders of insects and 90 Families. Note the specimens preserved in alcohol at the end. (Disclaimer, the butterfly was already beat up when it was collected!)

7. Get Superpowers!

A magnifying glass, **jeweler's loupe**, or microscope will let you explore the universe beneath your feet. A 10x Belomo Triplet Loupe is a great starter for anyone interested in identifying insects, or just taking a closer look at specimens.



More isn't always better, 10x magnification shows great detail.

Entomology Resources

ONLINE

1. First Detector Entomology Training Project: Overview of how to collect, photograph, preserve, and identify Insects.
http://wiki.bugwood.org/FD-ENT

2. BugGuide: Volunteers help ID insects and spiders in photos you submit, OR you can search through other's IDed photos.
http://bugguide.net

3. Ianni Butterfly: Spreading Butterflies - An Illustrated Guide.
http://bit.ly/1q3CNuZ

4. Iowa State Entomology Index of Internet Resources: Stuff for everyone, from kids to professionals.
http://www.ent.iastate.edu/list/

Books and Field Guides

Insects: Their Natural History and Diversity: With a Photographic Guide to Insects of Eastern North America by Stephen Marshall.

Peterson Field Guides:
1. A Field Guide to Insects: America North of Mexico.
2. A Field Guide to the Beetles of North America.
3. A Field Guide to Eastern Butterflies.

Caterpillars of Eastern North America: A Guide to Identification and Natural History.

Ants of North America: A Guide to the Genera.

A Guide to Common Freshwater Invertebrates of North America.

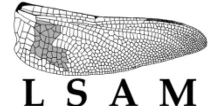
Beetles of Eastern North America by Arthur V. Evans.

Dragonflies through Binoculars: A Field Guide to Dragonflies of North America.

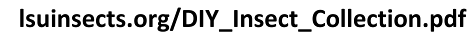
Common Spiders of North America by Richard Bradley.

Insect life: An introduction to nature-study and a guide for teachers, students, and others interested in out-of-door life. By John Henry Comstock, 1897.
Highly recommended, available free online at:
http://www.biodiversitylibrary.org/bibliography/1709#

If Mom and Dad are scared of bugs that's OK, you don't have to be!



Louisiana State Arthropod Museum, M. L. Ferro 2014



lsuinsects.org/DIY_Insect_Collection.pdf

